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Sequence Listing was accepted.

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Reviewer: Durreshwar Anjum

Timestamp: [year=2008; month=3; day=19; hr=13; min=31; sec=6; ms=35; ]

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Application No: 10088202 Version No: 6.0

Input Set:

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Finished: 2008-03-05 21:45:20.991  
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Total Warnings: 2  
Total Errors: 0  
No. of SeqIDs Defined: 6  
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# SEQUENCE LISTING

<110> Park, Eun Jeong  
Kim, Jang Seong  
Jang, Jihoon  
Yum, Jungsun  
Chung, Soo-il

<120> Novel Detoxified Mutants of Escherichia coli Heat-Labile  
Enterotoxin

<130> 58049-00003

<140> 10088202

<141> 2002-03-15

<150> PCT/KR99/00555

<151> 1999-09-15

<160> 6

<170> PatentIn version 3.5

<210> 1

<211> 52

<212> DNA

<213> Artificial sequence

<220>

<223> Primer

<220>

<221> primer\_bind

<222> (1)..(52)

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<211> 53

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<213> Artificial sequence

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<223> Primer

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<221> primer\_bind

<222> (1)..(53)

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<220>  
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Tyr Ala Asn Gly Asp Arg Leu Tyr Arg Ala Asp Ser Arg Pro Pro Asp  
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Glu Ile Lys Arg Ser Gly Gly Leu Met Pro Arg Gly His Asn Glu Tyr  
35 40 45

Phe Asp Arg Gly Thr Gln Met Asn Ile Asn Leu Tyr Asp His Ala Arg  
50 55 60

Gly Thr Gln Thr Gly Phe Val Arg Tyr Asp Asp Gly Tyr Val Ser Thr  
65 70 75 80

Tyr Leu Ser Leu Arg Ser Ala His Leu Ala Gly Gln Ser Ile Leu Ser  
85 90 95

Gly Tyr Ser Thr Tyr Tyr Ile Tyr Val Ile Ala Thr Ala Pro Asn Met  
100 105 110

Phe Asn Val Asn Asp Val Leu Gly Val Tyr Ser Pro His Pro Tyr Glu  
115 120 125

Gln Glu Val Ser Ala Leu Gly Gly Ile Pro Tyr Ser Gln Ile Tyr Gly  
130 135 140

Trp Tyr Arg Val Asn Phe Gly Val Ile Asp Glu Arg Leu His Arg Asn  
145 150 155 160

Arg Glu Tyr Arg Asp Arg Tyr Tyr Arg Asn Leu Asn Ile Ala Pro Ala  
165 170 175

Glu Asp Gly Tyr Arg Leu Ala Gly Phe Pro Pro Asp His Gln Ala Trp  
180 185 190

Arg Glu Glu Pro Trp Ile His His Ala Pro Gln Gly Cys Gly Asn Ser  
195 200 205

Ser Arg Thr Ile Thr Gly Asp Thr Cys Asn Glu Glu Thr Gln Asn Leu  
210 215 220

Ser Thr Ile Tyr Leu Arg Glu Tyr Gln Ser Lys Val Lys Arg Gln Ile  
225 230 235 240

Phe Ser Asp Tyr Gln Ser Glu Val Asp Ile Tyr Asn Arg Ile Arg Asp  
245 250 255

Glu Leu Met Asn Lys Val Lys Phe Tyr Val Leu Phe Thr Ala Leu Leu  
260 265 270

Ser Ser Leu Cys Ala His Gly Ala Pro Gln Ser Ile Thr Glu Leu Cys  
275 280 285

Ser Glu Tyr His Asn Thr Gln Ile Tyr Thr Ile Asn Asp Lys Ile Leu  
290 295 300

Ser Tyr Thr Glu Ser Met Ala Gly Lys Arg Glu Met Val Ile Ile Thr  
305 310 315 320

Phe Lys Ser Gly Ala Thr Phe Gln Val Glu Val Pro Gly Ser Gln His  
325 330 335

Ile Asp Ser Gln Lys Lys Ala Ile Glu Arg Met Lys Asp Thr Leu Arg  
340 345 350

Ile Thr Tyr Leu Thr Glu Thr Lys Ile Asp Lys Leu Cys Val Trp Asn  
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Asn Lys Thr Pro Asn Ser Ile Ala Ala Ile Ser Met Glu Asn  
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<211> 1514

<212> DNA

<213> Escherichia coli

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agcgacagca ccaaataatgt ttaatgttaa tgatgtatta ggcgtatata gccctcacc	540
atatgaacag gaggtttctg cgtaggttg aataccatat tctcagatat atggatggta	600
tcgtgttaat ttgtgtga ttgatgaacg attacatcgt aacagggaat atagagaccg	660
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<213> Escherichia coli

<220>

<221> SIGNAL

<222> (1)..(18)

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Met Lys Asn Ile Thr Phe Ile Phe Phe Ile Leu Leu Ala Ser Pro Leu  
1 5 10 15

Tyr Ala Asn Gly Asp Arg Leu Tyr Arg Ala Asp Ser Arg Pro Pro Asp  
20 25 30

Glu Ile Lys Arg Ser Gly Gly Leu Met Pro Arg Gly His Asn Glu Tyr  
35 40 45

Phe Asp Arg Gly Thr Gln Met Asn Ile Asn Leu Tyr Asp His Ala Arg  
50 55 60

Gly Thr Gln Thr Gly Phe Val Arg Tyr Asp Asp Gly Tyr Val Ser Thr  
65 70 75 80

Ser Leu Ser Leu Arg Ser Ala His Leu Ala Gly Gln Ser Ile Leu Ser  
85 90 95

Gly Tyr Ser Thr Tyr Tyr Ile Tyr Val Ile Ala Thr Ala Pro Asn Met  
100 105 110

Phe Asn Val Asn Asp Val Leu Gly Val Tyr Ser Pro His Pro Tyr Gln  
115 120 125

Val Ser Ala Leu Gly Gly Ile Pro Tyr Ser Gln Ile Tyr Gly Trp Tyr  
130 135 140

Arg Val Asn Phe Gly Val Ile Asp Glu Arg Leu His Arg Asn Arg Glu  
145 150 155 160

Tyr Arg Asp Arg Tyr Tyr Arg Asn Leu Asn Ile Ala Pro Ala Glu Asp  
165 170 175

Gly Tyr Arg Leu Ala Gly Phe Pro Pro Asp His Gln Ala Trp Arg Glu  
180 185 190

Glu Pro Trp Ile His His Ala Pro Gln Gly Cys Gly Asn Ser Ser Arg  
195 200 205

Thr Ile Thr Gly Asp Thr Cys Asn Glu Glu Thr Gln Asn Leu Ser Thr  
210 215 220

Ile Tyr Leu Arg Glu Tyr Gln Ser Lys Val Lys Arg Gln Ile Phe Ser  
225 230 235 240

Asp Tyr Gln Ser Glu Val Asp Ile Tyr Asn Arg Ile Arg Asp Glu Leu  
245 250 255

Met Asn Lys Val Lys Phe Tyr Val Leu Phe Thr Ala Leu Leu Ser Ser  
260 265 270

Leu Cys Ala His Gly Ala Pro Gln Ser Ile Thr Glu Leu Cys Ser Glu  
275 280 285

Tyr His Asn Thr Gln Ile Tyr Thr Ile Asn Asp Lys Ile Leu Ser Tyr  
290 295 300

Thr Glu Ser Met Ala Gly Lys Arg Glu Met Val Ile Ile Thr Phe Lys  
305 310 315 320

Ser Gly Ala Thr Phe Gln Val Glu Val Pro Gly Ser Gln His Ile Asp  
325 330 335

Ser Gln Lys Lys Ala Ile Glu Arg Met Lys Asp Thr Leu Arg Ile Thr  
340 345 350

Tyr Leu Thr Glu Thr Lys Ile Asp Lys Leu Cys Val Trp Asn Asn Lys  
355 360 365

Thr Pro Asn Ser Ile Ala Ala Ile Ser Met Glu Asn  
370 375 380

<210> 6

<211> 1508

<212> DNA

<213> Escherichia coli

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cattttttttt attttattag catcgccatt atatgcaa atggcgacagat tataccgtgc	240
tgactctaga cccccagatg aaataaaacg ttccggaggt cttatgcca gagggcataa	300
tgagtacttc gatagaggaa ctcaaatgaa tattaatctt tatgatcacg cgagaggaac	360
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tgctcactta gcaggacagt ctatattatc aggatattcc acttactata tatatgttat	480
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